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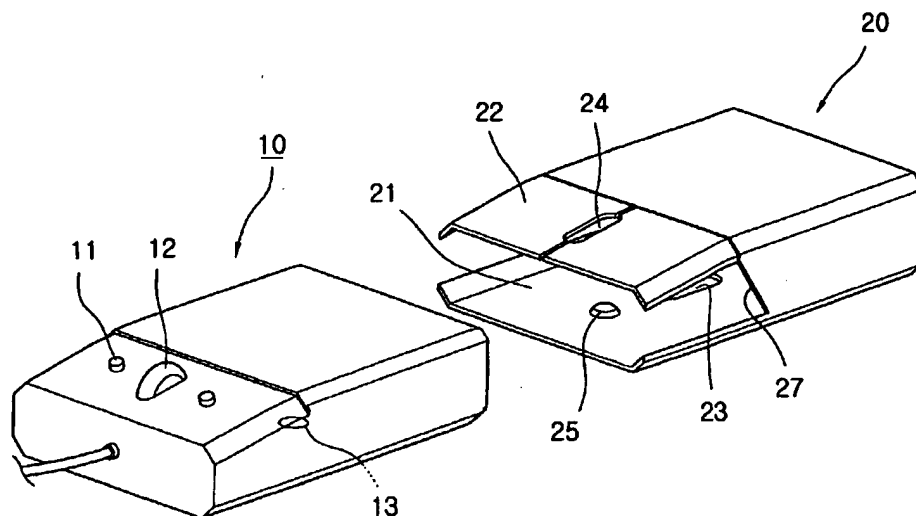
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(54) Title: COMPUTER MOUSE CASE



(57) Abstract: Disclosed herein is a computer mouse case which is capable of being detachably attached to a main body of a computer mouse rapidly and conveniently in such a manner that the case covers the main body of the computer mouse, thereby effectively protecting the mouse from foreign materials and easily removing the foreign materials from the computer mouse case. The case comprises a receiving part having an open front so that the main body of the computer mouse is inserted into the receiving part through the open front, a push part attached integrally to one upper side thereof, the push part corresponding to the operation buttons, and a sensor hole formed at the bottom thereof, the sensor hole corresponding to the sensing part of the computer mouse. Consequently, the present invention has the effects of providing a sanitary work environment and performing work in a pleasant environment.

COMPUTER MOUSE CASE

Technical Field

5 The present invention relates to a computer mouse case, and more particularly to a computer mouse case which is capable of being detachably attached to a main body of a computer mouse rapidly and conveniently in such a manner that the case covers the main body of the computer mouse,
10 thereby effectively protecting the mouse from foreign materials and easily removing the foreign materials from the computer mouse case.

Background Art

15 As is well known, a mouse is one of the input devices connected to a computer system and used to input various information, similar to a keyboard. The mouse is generally held by one hand of a user of the mouse so that it is
20 conveniently used.

 When the mouse is used for a long time, however, the surface of the mouse is contaminated by foreign materials, such as sweat from the palm of the hand of the user of the mouse and dirt, which makes the user of the mouse
25 unpleasant. In addition, the contaminated mouse is

unsanitary. Moreover, it is not possible to wash the mouse with water since the mouse is an electronic product. Consequently, it is very difficult to remove the foreign materials from the mouse.

5

Disclosure of the Invention

Therefore, the present invention has been made in view of the above problems, and it is an object of the present invention to provide a computer mouse case which is capable of being detachably attached to a main body of a computer mouse rapidly and conveniently in such a manner that the case covers the main body of the computer mouse, thereby effectively protecting the mouse from foreign materials and easily removing the foreign materials from the computer mouse case.

It is another object of the present invention to provide a computer mouse case which is not easily separated from the main body of the computer mouse.

It is still another object of the present invention to provide a computer mouse case which comprises an upper case part and a lower case part, whereby the computer mouse case is detachably attached to the main body of the computer mouse with ease irrespective of the shape of the main body of the computer mouse.

It is still another object of the present invention to provide a computer mouse case which comprises a case fixing part operated by a single touch operation, whereby the computer mouse case is detached from or attached to the main body of the computer mouse rapidly and conveniently.

It is still another object of the present invention to provide a computer mouse case which is capable of giving better tactile sensation of clicking the mouse to a user of the computer mouse case and which is capable of minimizing occurrence of wear between hooks and a corresponding catching member.

It is still another object of the present invention to provide a computer mouse case which is easily separated from the computer mouse by holding a part of the main body of the computer mouse with one hand of the user of the computer mouse case when the computer mouse case is separated from the computer mouse.

It is still another object of the present invention to provide a computer mouse case which comprises a push part having increased elastic stability, whereby it is prevented that the push part is unnecessarily pushed when the mouse is in use, and constant elastic stability is maintained even after the computer mouse case is used for a long time.

It is still another object of the present invention to provide a computer mouse case wherein the push part is

detachably attached to the computer mouse case with ease, whereby the push part, which makes frequent contact with the computer mouse, is easily separated from the computer mouse case so that only the push part is cleaned.

5 It is still another object of the present invention to provide a computer mouse case wherein the push part is elastically supported in such a manner that the push part is spaced a predetermined distance from corresponding operation buttons when the computer mouse case is attached to the main
10 body of the computer mouse in such a manner that the case covers the main body of the computer mouse, whereby it is prevented that the operation buttons are unnecessarily pushed.

15 In accordance with the present invention, the above and other objects can be accomplished by the provision of a case for a computer mouse having operation buttons provided at an upper front part of a main body of the computer mouse and a sensing part provided at the bottom part of the main body of the computer mouse, wherein the case comprises: a
20 receiving part having an open front so that the main body of the computer mouse is inserted into the receiving part through the open front; a push part attached integrally to one upper side thereof, the push part corresponding to the operation buttons; and a sensor hole formed at the bottom
25 thereof, the sensor hole corresponding to the sensing part

of the computer mouse.

Preferably, the case is provided at the inner side thereof with at least one fixing projection, and the main body of the computer mouse is provided at the outer side thereof with at least one fixing groove, the fixing groove
5 corresponding to the fixing projection.

Preferably, the case is divided into an upper case part for covering the top surface and the side surfaces of the main body of the computer mouse, and a lower case part
10 for covering the bottom surface of the main body of the computer mouse, the upper and lower case parts being hinged to each other at the rear thereof, and the case further comprises a case fixing part for detachably fixing the upper and lower case parts to the main body of the computer mouse.

15 Preferably, the case fixing part comprises: a fixing groove formed at the front of the main body of the computer mouse and having at least one through-hole formed at the upper and lower inside surfaces thereof; a button mounted in the fixing groove and having hooks attached to
20 the upper and lower both sides thereof, the hooks being inserted into the through-hole; at least one spring disposed between the button and the fixing groove; and at least one catching member formed at the inner ends of the push part and the lower case part so that it is engaged with the
25 hooks.

Preferably, the push part comprises an upper plate and a lower plate. The upper and lower plates are spaced apart from each other by means of a rear connection part connecting the upper plate and the lower plate, and the lower plate of the push part has a button insertion hole formed therein.

Preferably, the case has gripping openings formed at both sides thereof.

Preferably, the push part is fixed to the case by means of a connection member made of an elastic material.

Preferably, the push part is detachably engaged with the case. To this end, the push part is provided at the upper surface of one side thereof with an engagement projection, and the case is provided at one side thereof with an engagement groove, the engagement groove corresponding to the engagement projection.

Preferably, the computer mouse case further comprises a spacer disposed between the push part and the main body of the computer mouse, the spacer being made of an elastic material.

Brief Description of the Drawings

The above and other objects, features and other advantages of the present invention will be more clearly

understood from the following detailed description taken in conjunction with the accompanying drawings, in which:

Fig. 1 is an exploded perspective view showing a computer mouse case according to a preferred embodiment of the present invention;

Figs. 2a and 2b show a computer mouse case according to another preferred embodiment of the present invention, in which Fig. 2a is an exploded perspective view of the computer mouse case, and Fig. 2b is a partial longitudinal sectional view of the computer mouse case;

Fig. 3 is a partial longitudinal sectional view showing a computer mouse case according to another preferred embodiment of the present invention;

Fig. 4 is a partial longitudinal sectional view showing a computer mouse case according to another preferred embodiment of the present invention;

Fig. 5 is a partial longitudinal sectional view showing a computer mouse case according to another preferred embodiment of the present invention; and

Fig. 6 is a partial longitudinal sectional view showing a computer mouse case according to another preferred embodiment of the present invention.

Best Mode for Carrying Out the Invention

Fig. 1 is an exploded perspective view showing a computer mouse case 20 according to a preferred embodiment of the present invention. As shown in Fig. 1, a main body 10 of a computer mouse is provided at an upper front part thereof with a pair of operation buttons 11. The main body 10 of the computer mouse is also provided at the bottom part thereof with a sensing part (not shown), such as a ball sensor or an optical sensor.

The computer mouse case 20 comprises: a receiving part 21 having an open front so that the main body 10 of the computer mouse is inserted into the receiving part 21 through the open front; a push part 22 attached integrally to one upper side thereof, which correspond to the operation buttons 11; and a sensor hole 23 formed at the bottom thereof, which corresponds to the sensing part of the computer mouse. When the aforesaid mouse is a wheel mouse with a wheel 12 mounted therein, a wheel hole 24 corresponding to the wheel 12 of the wheel mouse is formed in the middle of the push part 22 of the computer mouse case 20.

With the above-stated construction of the computer mouse case 20, the main body 10 of the computer mouse can be slidably inserted into the computer mouse case 20 rapidly and conveniently. When the computer mouse case 20 is contaminated by foreign materials while it is in use, the

computer mouse case 20 can be easily separated from the main body 10 of the computer mouse so that it can be cleaned, and then attached to the main body 10 of the computer mouse so that it can be used again.

5 The computer mouse case 20 is provided at the inner bottom thereof with at least one fixing projection 25. The main body 10 of the computer mouse is also provided at the outer bottom thereof with at least one fixing groove 13, which corresponds to the fixing projection 25.

10 When the main body 10 of the computer mouse is inserted into the computer mouse case 20, the fixing projection 25 is engaged into the fixing groove 13. Consequently, it is prevented that the computer mouse case 20 is easily separated from the main body 10 of the computer
15 mouse when it is in use.

 At both sides of the computer mouse case 20 are formed gripping openings 27 so that the both sides of the main body 10 of the computer mouse exposed through the gripping openings 27 are gripped by one hand of a user of the mouse,
20 and the computer mouse case 20 is gripped by the other hand of the user when the computer mouse case 20 is to be separated from the main body 10 of the computer mouse. Consequently, the computer mouse case 20 can be more easily separated from the main body 10 of the computer mouse.

25 Figs. 2a and 2b show a computer mouse case 20

according to another preferred embodiment of the present invention, in which Fig. 2a is an exploded perspective view of the computer mouse case, and Fig. 2b is a partial longitudinal sectional view of the computer mouse case. As
5 shown in Figs. 2a and 2b, the computer mouse case 20 is divided into an upper case part 26a for covering the top surface and the side surfaces of the main body 10 of the computer mouse, and a lower case part 26b for covering the bottom surface of the main body 10 of the computer mouse.
10 The upper and lower case parts 26a and 26b are hinged to each other at the rear thereof.

The computer mouse case 20 further comprises a case fixing part 30 for detachably fixing the upper and lower case parts 26a and 26b to the main body 10 of the computer
15 mouse. The case fixing part 30 may be easily realized using any well-known fixing devices, which is obvious to those skilled in the art.

Consequently, the main body 10 of the computer mouse can be easily inserted into the computer mouse case 20 when
20 the space between the upper and lower case parts 26a and 26b is widened. This embodiment has an advantage in that the computer mouse case 20 can be easily applied to the shape of the main body 10 of the computer mouse as compared to the computer mouse case operated in a sliding fashion as shown
25 in Fig. 1.

The case fixing part 30 comprises: a fixing groove 31 formed at the front of the main body 10 of the computer mouse and having at least one through-hole 32 formed at the upper and lower inside surfaces thereof; a button 33 mounted
5 in the fixing groove 31 and having hooks 34a attached to the upper and lower both sides thereof, the hooks 34a being inserted into the through-hole 32; at least one spring 35 disposed between the button 33 and the fixing groove 31; and at least one catching member 34b formed at the inner end of
10 the push part 22 so that it is engaged with the hooks 34a.

When the button 33 is pushed by the user of the computer mouse, the hooks 34a are retracted so that the catching member 34b is disengaged from the hooks 34a. As a result, the upper and lower case parts 26a and 26b are
15 separated from the main body 10 of the computer mouse. When the upper and lower case parts 26a and 26b are pushed against each other so that the space between the upper and lower case parts 26a and 26b is narrow, on the other hand, the catching member 34b is engaged with the hooks 34a. As a
20 result, the upper and lower case parts 26a and 26b are attached to the main body 10 of the computer mouse. In this way, the computer mouse case 20 can be detachably attached to the main body 10 of the computer mouse rapidly and conveniently by a single touch operation.

25 Fig. 3 is a partial longitudinal sectional view

showing a computer mouse case according to another preferred embodiment of the present invention. As shown in Fig. 3, the push part 22 comprises an upper plate 220 and a lower plate 230. At the lower plate 230 of the push part 22 is formed a button insertion hole 231, through which the operation buttons 11 are inserted.

The upper and lower plates 220 and 230 are spaced apart from each other by means of a rear connection part 240 connecting the upper plate 220 and the lower plate 230. The lower plate 230 is provided at the inner front thereof with the catching member 34b, which is engaged with the hooks 34a.

Consequently, the upper plate 220 is elastically moved to push the operation buttons 11 while the lower plate 230 is fixed by means of the catching member 34b to attach the upper case part 26a to the main body 10 of the computer mouse.

This embodiment has an advantage in that the catching member 34b is not moved even though the push part 22 is pushed by the user unlike the embodiment of Fig. 2b, whereby interference between the catching member 34b and the hooks 34a is minimized.

Fig. 4 is a partial longitudinal sectional view showing a computer mouse case according to another preferred embodiment of the present invention. As shown in Fig. 4, the

push part 22 is fixed to the computer mouse case 20 by means of a connection member 40 made of an elastic material. Consequently, elastic stability of the push part 22 is increased, whereby it is prevented that the push part 22 is unnecessarily pushed when the mouse is in use, and constant elastic stability is maintained even after the computer mouse case is used for a long time.

Fig. 5 is a partial longitudinal sectional view showing a computer mouse case according to another preferred embodiment of the present invention. As shown in Fig. 5, the push part 22 is detachably engaged with the computer mouse case 20. The push part 22 is provided at upper surface of one side thereof with an engagement projection 28a, and the computer mouse case 20 is provided at one side thereof with an engagement groove 28b, which corresponds to the engagement projection 28a.

Consequently, the push part 22 can be easily separated from the computer mouse case 20, whereby the push part 22, which makes frequent contact with the mouse, is separated from the computer mouse case so that only the push part 22 is cleaned.

It should be noted that the push part 22 may be detachably engaged with the computer mouse case 20 using any well-known engaging devices instead of the aforesaid engagement projection and groove, which is obvious to those

skilled in the art.

Fig. 6 is a partial longitudinal sectional view showing a computer mouse case according to another preferred embodiment of the present invention. As shown in Fig. 6, between the push part and the main body 10 of the computer mouse is disposed a spacer 50 made of an elastic material. The spacer 50 is placed on the main body 10 of the computer mouse while it surrounds the operation button 11. The spacer 50 serves to elastically support the push part 22 so that the push button 22 is spaced a predetermined distance from the operation button 11. To this end, the height of the spacer 50 is slightly higher than that of the operation button 11.

Consequently, the push part 22 is spaced apart from the operation button 11 while the main body 10 of the computer mouse is fitted in the computer mouse case 20, and the push part 22 is operated only when it is pushed at a predetermined pressure.

Industrial Applicability

As apparent from the above description, the present invention provides a computer mouse case which is capable of being detachably attached to a main body of a computer mouse rapidly and conveniently in such a manner that the case

covers the main body of the computer mouse, thereby effectively protecting the mouse from foreign materials and easily removing the foreign materials from the computer mouse case. Consequently, the present invention has the effects of providing a sanitary work environment and performing work in a pleasant environment.

According to the present invention, the computer mouse case and the main body of the computer mouse are provided with simple fixing devices, respectively, whereby the computer mouse case is not easily separated from the main body of the computer mouse when the mouse is in use, and the computer mouse case can be used more conveniently.

The computer mouse case comprises an upper case part and a lower case part, whereby the computer mouse case is detachably attached to the main body of the computer mouse with ease. Especially, the computer mouse case comprises a case fixing part operated by a single touch operation, whereby the computer mouse case is detached from or attached to the main body of the computer mouse rapidly and conveniently.

According to the present invention, interference between a catching member and corresponding hooks is decreased when the push part of the computer mouse case is pushed, whereby the computer mouse case gives better tactile sensation of clicking the mouse to a user of the computer

mouse case. At the same time, occurrence of wear between the hooks and the catching member is minimized, whereby the service life of the computer mouse case is increased.

At both sides of the computer mouse case are formed gripping openings so that parts of the main body of the computer mouse are gripped by one hand of a user of the mouse when the computer mouse case is to be separated from the main body of the computer mouse, whereby the computer mouse case can be more easily separated from the main body of the computer mouse.

Furthermore, elastic stability of the push part is increased by using a connection member made of an elastic material, whereby it is prevented that the push part is unnecessarily pushed when the mouse is in use, and constant elastic stability is maintained even after the computer mouse case is used for a long time.

According to the present invention, the push part is detachably attached to the computer mouse case, whereby the push part, which makes frequent contact with the computer mouse, is easily separated from the computer mouse case so that only the push part is cleaned.

Moreover, the present invention also provides a spacer made of an elastic material so that the push part is spaced a predetermined distance from corresponding operation buttons, whereby it is prevented that the operation buttons

are unnecessarily pushed.

Although the preferred embodiments of the present invention have been disclosed for illustrative purposes, those skilled in the art will appreciate that various
5 modifications, additions and substitutions are possible, without departing from the scope and spirit of the invention as disclosed in the accompanying claims.

Claims:

1. A case for a computer mouse having operation buttons provided at an upper front part of a main body of the computer mouse and a sensing part provided at the bottom part of the main body of the computer mouse, wherein the case comprises:

a receiving part having an open front so that the main body of the computer mouse is inserted into the receiving part through the open front;

a push part attached integrally to one upper side thereof, the push part corresponding to the operation buttons; and

a sensor hole formed at the bottom thereof, the sensor hole corresponding to the sensing part of the computer mouse.

2. The case as set forth in claim 1,

wherein the case is provided at the inner side thereof with at least one fixing projection, and

wherein the main body of the computer mouse is provided at the outer side thereof with at least one fixing groove, the fixing groove corresponding to the fixing projection.

3. The case as set forth in claim 1,

wherein the case is divided into an upper case part for covering the top surface and the side surfaces of the main body of the computer mouse, and a lower case part for covering the bottom surface of the main body of the computer mouse, the upper and lower case parts being hinged to each other at the rear thereof, and

wherein the case further comprises a case fixing part for detachably fixing the upper and lower case parts to the main body of the computer mouse.

4. The case as set forth in claim 3, wherein the case fixing part comprises:

a fixing groove formed at the front of the main body of the computer mouse and having at least one through-hole formed at the upper and lower inside surfaces thereof;

a button mounted in the fixing groove and having hooks attached to the upper and lower both sides thereof, the hooks being inserted into the through-hole;

at least one spring disposed between the button and the fixing groove; and

at least one catching member formed at the inner ends of the push part and the lower case part so that it is engaged with the hooks.

5. The case as set forth in claim 4,

wherein the push part comprises an upper plate and a lower plate, the upper and lower plates being spaced apart from each other by means of a rear connection part
5 connecting the upper plate and the lower plate, and

wherein the lower plate of the push part has a button insertion hole formed therein.

6. The case as set forth in any one of claims 1 to 5,

10 wherein the case has gripping openings formed at both sides thereof.

7. The case as set forth in any one of claims 1 to 5,

wherein the push part is fixed to the case by means of a
15 connection member made of an elastic material.

8. The case as set forth in any one of claims 1 to 5,

wherein the push part is detachably engaged with the case, and

20 wherein the push part is provided at the upper surface of one side thereof with an engagement projection, and the case is provided at one side thereof with an engagement groove, the engagement groove corresponding to the engagement projection.

25

9. The case as set forth in any one of claims 1 to 5, further comprising a spacer disposed between the push part and the main body of the computer mouse, the spacer being made of an elastic material.

AMENDED CLAIMS

[received by the International Bureau on 01 October 2003 (01.10.03);
original claims 1, 4, 6, 7, 8 and 9 amended; original claims 2 and 3 canceled
and remaining claim unchanged (4 pages)]

CLAIMS

1. A case for a computer mouse having operation
buttons provided at an upper front part of a main body of
5 the computer mouse and a sensing part provided at the
bottom part of the main body of the computer mouse,
wherein the case comprises:

a receiving part having an open front so that the
main body of the computer mouse is inserted into the
10 receiving part through the open front;

a push part attached integrally to one upper side
thereof, the push part corresponding to the operation
buttons; and

a sensor hole formed at the bottom thereof, the
15 sensor hole corresponding to the sensing part of the
computer mouse;

wherein the case is divided into an upper case part
for covering the top surface and the side surfaces of the
main body of the computer mouse, and a lower case part for
20 covering the bottom surface of the main body of the
computer mouse, the upper and lower case parts being hinged
to each other at the rear thereof, and

wherein the case further comprises a case fixing
part for detachably fixing the upper and lower case parts
25 to the main body of the computer mouse.

4. The case as set forth in claim 1, wherein the case fixing part comprises:

a fixing groove formed at the front of the main body
5 of the computer mouse and having at least one through-hole formed at the upper and lower inside surfaces thereof;

a button mounted in the fixing groove and having hooks attached to the upper and lower both sides thereof,
10 the hooks being inserted into the through-hole;

at least one spring disposed between the button and the fixing groove; and

at least one catching member formed at the inner ends of the push part and the lower case part so that it
15 is engaged with the hooks.

5. The case as set forth in claim 4,

wherein the push part comprises an upper plate and a lower plate, the upper and lower plates being spaced
20 apart from each other by means of a rear connection part connecting the upper plate and the lower plate, and

wherein the lower plate of the push part has a button insertion hole formed therein.

25 6. The case as set forth in any one of claims 1, 4

and 5, wherein the case has gripping openings formed at both sides thereof.

7. The case as set forth in any one of claims 1, 4
5 and 5, wherein the push part is fixed to the case by means of a connection member made of an elastic material.

8. The case as set forth in any one of claims 1, 4
and 5,
10 wherein the push part is detachably engaged with the case, and

wherein the push part is provided at the upper surface of one side thereof with an engagement projection, and the case is provided at one side thereof with an
15 engagement groove, the engagement groove corresponding to the engagement projection.

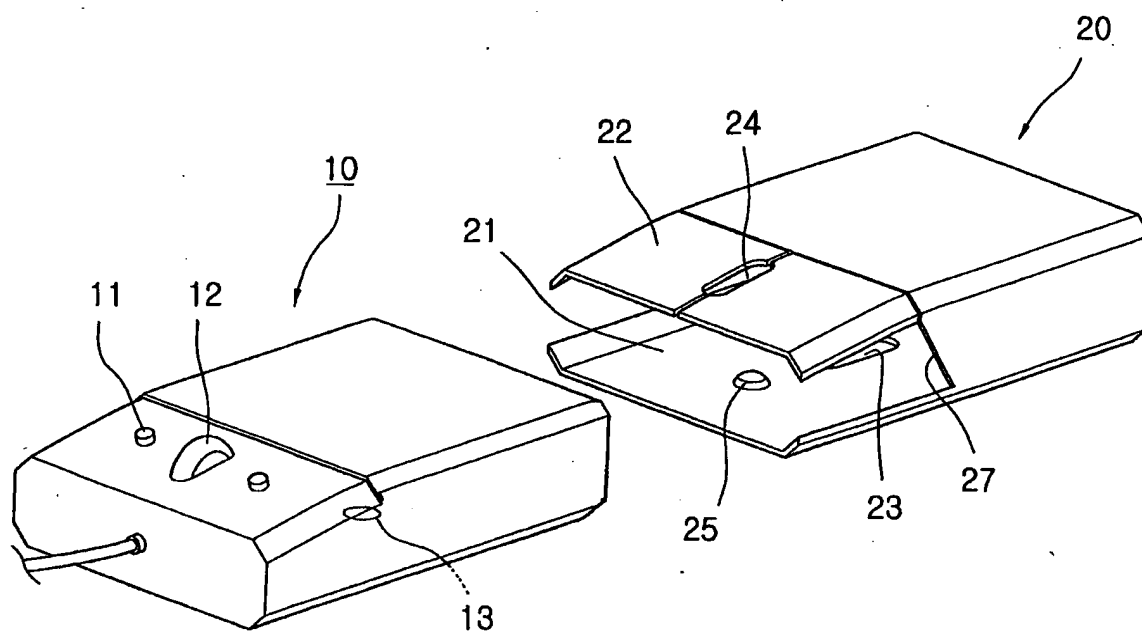
9. The case as set forth in any one of claims 1, 4
and 5, further comprising a spacer disposed between the
20 push part and the main body of the computer mouse; the spacer being made of an elastic material.

STATEMENT UNDER PCT ARTICLE 19

Claim 1 has been amended herein to merger claims 1 and 3. Claim 2 has been canceled and Claim 4 has been amended to be depended upon amended claim 1 rather than canceled claim 3. Multiple Claims 6, 7, 8 and 9 have been amended to be depended upon amended claims 1, 4 and original claim 5. The purpose of those amendments is to limit the scope of the claimed invention. These amendments should have no effect on the description and drawings.

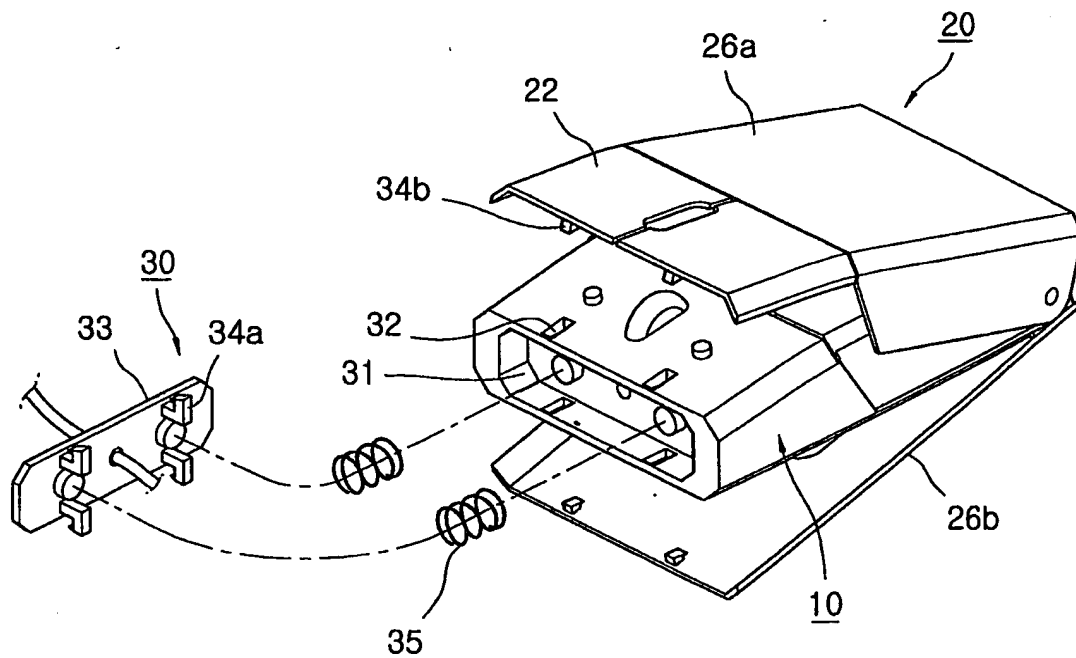
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FIG. 1



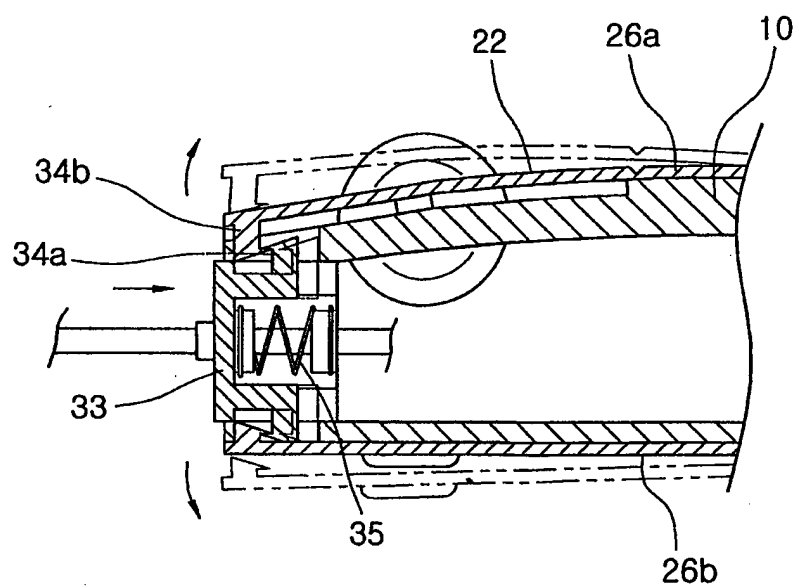
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FIG.2a



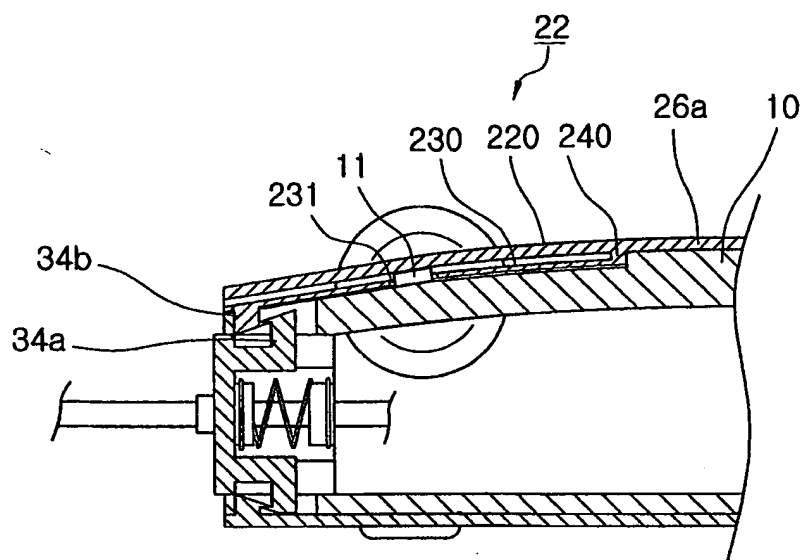
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FIG.2b



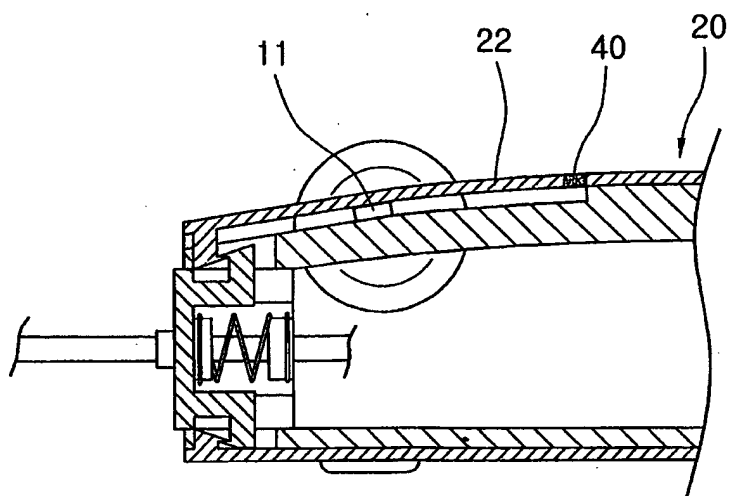
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FIG.3



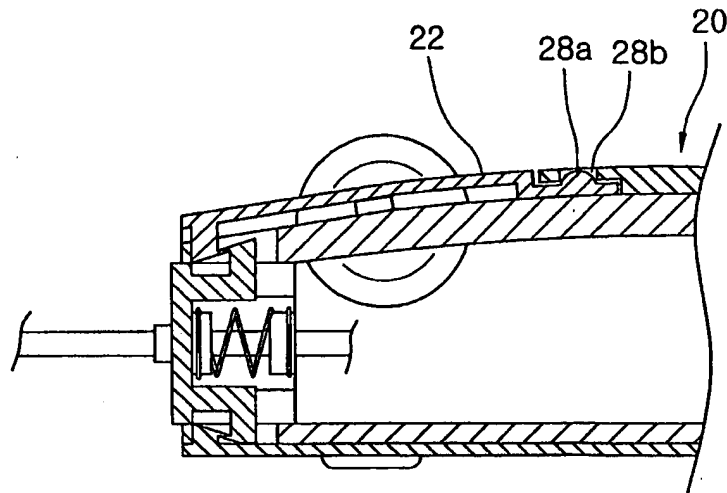
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FIG. 4



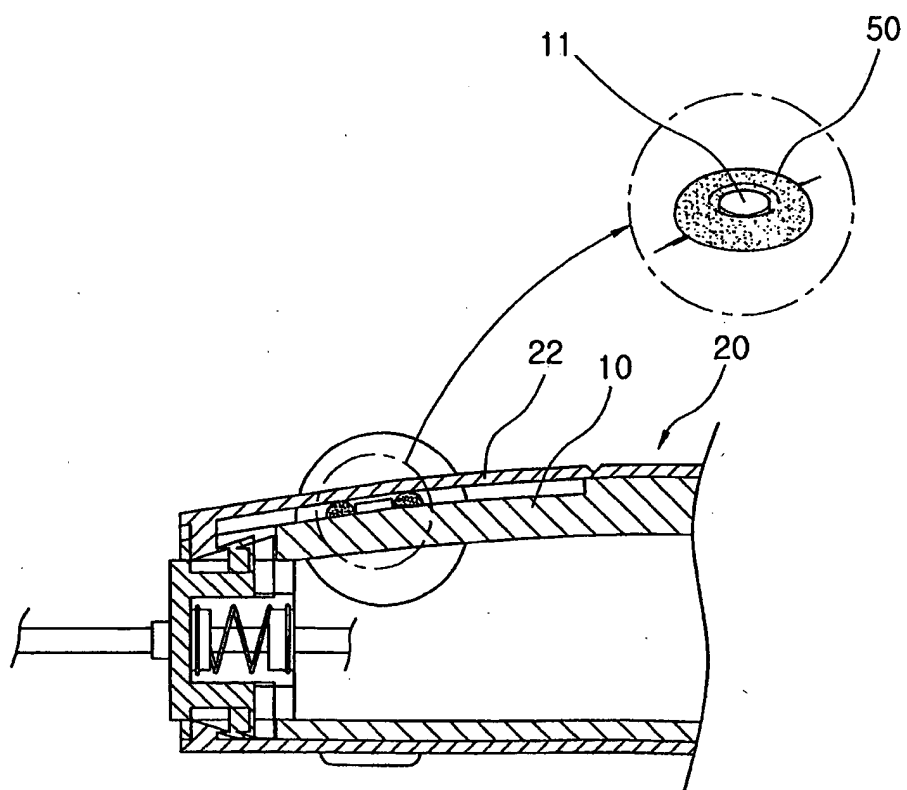
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FIG.5



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FIG. 6



INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR03/01127

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 G06F 3/033

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G06F 3/033

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Patents and applications for inventions since 1975

Korean Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

KIPASS, PAJ, USPTO, FPD, DELPHION

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KR 20-267980 U (Kim, Ik-Soo) Mar, 15, 2002 See fig 2, 5	1, 2
Y	KR 10-2001-86739 A (Micron co) Sep, 15, 2001 See fig 3	1, 2
A	JP 10-247130 A (PABURISHITEIADOBENCHIYAAZU) Sep, 14, 1998 See fig 2 and abstract	1-9
A	JP 09-319515 A (TAKAHASHIEIJI) Dec, 12, 1997 See fig 1	1-9
A	JP 11-003178 A (TAGAWAKOGYO) Jan, 6, 1999 See fig 1	1-9

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Date of the actual completion of the international search

06 AUGUST 2003 (06.08.2003)

Date of mailing of the international search report

07 AUGUST 2003 (07.08.2003)

Name and mailing address of the ISA/KR



Korean Intellectual Property Office
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